WHAT IS CLAIMED IS:

1. An exposure method comprising the steps of:

arranging an object to be exposed and a transparent plate that includes a thin film, within such a range that near field light from the thin film may operate on the object, the thin film having a light transmittance that changes according to an intensity of light of incidence; and

exposing the object with near field light generated by projecting a pattern on a mask, onto the thin film of the transparent plate.

2. An exposure method according to claim 1, wherein said arranging and exposing steps use a step-and-repeat projection exposure apparatus.

3. An exposure method according to claim 1, wherein said arranging and exposing steps use a step-and-scan projection exposure apparatus.

4. An exposure method according to claim 1, wherein the thin film is composed of a phase transition material.

5. An exposure method according to claim 1, wherein the thin film is held by stabilizing layers for stabilizing

fluctuations in the light transmittance of the thin film and for protecting the thin film.

6. An exposure method according to claim 1, wherein a distance between the transparent plate and object is set from zero to a wavelength of the near field light.

7. An exposure method according to claim 1, wherein the light of incidence is selected from ultraviolet and soft X rays.

8. An exposure method according to claim 1, wherein the object includes a wafer and a resist applied onto the wafer.

9. An exposure method according to claim 8, further comprising the step of holding the wafer on a wafer chuck while the transparent plate and wafer are arranged within such a range that the near field light operates on the wafer, and said exposing step performs a projection exposure for the object.

10. An exposure method according to claim 1, wherein said arranging step covers a whole surface of the object with the thin film.

11. An exposure method according to claim 1, further comprising the step of exfoliating the thin film from the object after said exposing step.

12. An exposure method according to claim 1, further comprising the step of utilizing reflected light from a surface of the transparent plate to detect an exposure position for the object.

13. An exposure method according to claim 1, wherein the object includes an alignment mark, said method further comprising the step of aligning the object using the alignment mark as well as correcting an aberration.

14. An exposure method according to claim 1, wherein the mask includes a first pattern with a first line width and a second pattern with a second line width which is thinner than the first line width, and said exposing step exposes the second pattern with the near field light.

15. An exposure method according to claim 1, further comprising the step of correcting an aberration produced during the projecting due to a thickness of the transparent plate.

16. An exposure method according to claim 15, wherein said correcting step changes separations among multiple lenses for projecting the pattern onto the object.

17. An exposure apparatus comprising:

a transparent plate arranged within such a range that near field light from said transparent plate may operate on an object to be exposed, said transparent plate including a thin film whose light transmittance changes according to an intensity of light of incidence; and

a projection optical system for projecting a pattern on a mask onto the thin film of the transparent plate and for exposing the object with the near field light generated by the projection.

18. An exposure apparatus according to claim 17, wherein said exposure apparatus is a step-and-repeat projection apparatus.

19. An exposure apparatus according to claim 17, wherein said exposure apparatus is a step-and-scan projection apparatus.

20. An exposure apparatus according to claim 17, wherein the thin film is composed of a phase transition material.

21. An exposure apparatus according to claim 17, further comprising a stabilizing layer for stabilizing fluctuations in the light transmittance of the thin film as well as protects the thin film.

22. An exposure apparatus according to claim 17, wherein a distance between the transparent plate and the object is set from zero to a wavelength of the light of incidence.

23. An exposure apparatus according to claim 17, wherein the light of incidence is selected from ultraviolet and soft X rays.

24. An exposure apparatus according to claim 17, wherein the object includes a wafer and a resist applied to the wafer.

25. An exposure apparatus according to claim 24, further comprising a wafer chuck for holding the wafer so that said projection optical system may performs a projection exposure for the object while said transparent plate and the wafer are located close to each other.

26. An exposure apparatus according to claim 17, wherein the thin film covers a whole surface of the object.

27. An exposure apparatus according to claim 17, further comprising a mechanism for arranging said transparent plate and the object within the range before the object is exposed, and for exfoliating said transparent plate and the object from each other after the object is exposed.

28. An exposure apparatus according to claim 17, further comprising an exposure position detecting system which utilizes reflected light from a surface of said transparent plate to detect an exposure position of the object.

29. An exposure apparatus according to claim 17, wherein the object includes an alignment mark, and said apparatus further comprises a corrector for aligning the object based on the alignment mark and corrects an aberration.

30. An exposure apparatus according to claim 17, wherein the mask includes a first pattern with a first line width and a second pattern with a second line width which is thinner than the first line width, and said projection optical system exposes the second pattern using the near field light.

31. An exposure apparatus according to claim 17, further comprising a correction device for correcting an aberration resulted from a thickness of the transparent plate.

32. An exposure apparatus according to claim 31, wherein said projection optical system includes a plurality of lenses, and said correction device includes a mechanism for changing a separation between the lenses.

33. A device fabricating method using an exposure apparatus comprising a transparent plate arranged within such a range that near field light from the transparent plate may operate on an object to be exposed, the transparent plate including a thin film whose light transmittance changes according to an intensity of light of incidence, and a projection optical system for projecting a pattern on a mask onto the thin film in the transparent plate and exposes the object with near field light generated by said projection, said method comprising the steps of:

exposing the object using the exposure apparatus; and

performing a predetermined process for the object exposed.

34. A device fabricated from an object exposed by using an exposure apparatus comprising a transparent plate arranged an object to be exposed within such a range that near field light from the transparent plate may operate on the object, the transparent plate including a thin film whose light transmittance changes according to an intensity of light of incidence, and a projection optical system for projecting a pattern on a mask onto the thin film of the transparent plate and for exposing the object with the near field light generated by the projection.